



## Bachelor of Science in Natural Resources: Wildlife Conservation and Management

FALL			SPRING		
Course Title	Units	Prerequisite?	Course Title	Units	Prerequisite?
CHEM 151 OR CHEM 141 AND 143	4	MATH 112 or placement	CHEM 152 OR CHEM 142 AND 144	4	First semester CHEM
ENGL 101 or 109H	3		ENGL 102	3	
Tier 1 Traditions and Cultures (160s)	3		ECOL 182R General Biology Lecture	3	
Tier 1 Individuals and Societies (150s)	3		ECOL 182L General Biology Lab	1	
<b>RNR 200 Conservation of Natural Environments</b>	3		Calculus: MATH 113, 122A/B, or 125	3-5	MATH 112 or placement test
TOTAL	16		Tier 1 Individuals and Societies (150s)	3	
			TOTAL	17/19	
Tier 2 Individuals and Societies	3		Physical Science: CHEM 241a, 243a or PHYS 102, 181 or ENVS 200, 201 or GEOS 251	4	varies
<b>RNR 316 Natural Resources Ecology</b>	3	ECOL 182R, ECOL 182L, RNR 230	Tier 1 Traditions and Cultures (160s)	3	
Statistics: MATH 163 or 263, PSY 230 or SBS 200	3	MATH 112 or placement	Tier 2 Arts or Humanities	3	
<b>RNR 230 R and RNR 230L Field Botany</b>	3		Technical Elective	3	
MCB 181L General Biology Lab	1	MATH 112 or placement; CHEM 151	<b>RNR 384 Natural Resources Management Practices</b>	3	
MCB 181R General Biology Lecture	3	MATH 112 or placement; CHEM 151	TOTAL	16	
TOTAL	16				
ECON 200 (Economics)	3		<b>RNR 321: Ecological Surveys and Sampling</b>	3	Statistics
Technical Writing: ENGL 308, 313, 340, ENVS 408, 415	3		RAM 382 Rangeland Plant Communities	3	RNR 230R and RNR 230L
ECOL "ology" elective (e.g. ECOL 485-Mammology)	4	RNR 316 recommended	ECOL "ology" elective (e.g. ECOL 483-Herp or ECOL 484 Orn)	4	RNR 316 recommended
Technical Skills Elective	3		Oral or Media Communication: ALC 422, COMM 113, COMM 119, JOUR 455, JOUR 472, SBE 202, SCI 401, RNR 495A	3	
TOTAL	13		Technical Electives	3	
			TOTAL	16	
WFSC 444 Wildlife Ecology, Conservation, and Management	4	ECOL 182R, ECOL 182L, RNR 316 and RNR 321; Junior/Senior standing.	WFSC 445 Population Ecology	3	ECOL 182R, ECOL 182L, RNR 316, RNR 321 and WFSC 444
SNRE requirement	≥1		Genetics PLS 312 or ECOL 320	4	MCB 181R and MCB 181L; 2 semesters CHEM
Technical Electives	10		Technical Electives	3	
TOTAL	15		<b>RNR 480 Natural Resources Policy and Law</b>	3	RNR 200
			TOTAL	13	

Diversity requirement - One general education course must have the non-Western Civilization, Gender, Race, Class, Ethnicity designation

2nd semester language proficiency required--not included in this plan.

Catalog Year 2020-21

## **Suggested Technical Electives** (those marked with an \* already fulfill major requirements)

### **Ecology/Zoology/Animal Health**

WFSC 385 Zoo and Aquarium Conservation  
ACBS 400A/B Animal Anatomy and Physiology  
ECOL 335 Evolution  
ECOL 473 Topics in Behavioral Ecology  
ECOL 487 Animal Behavior  
ECOL 403 Biology of Animal Parasites  
3<sup>rd</sup> "Ology" of ECOL 483 (Herpet), 484 (Ornith),  
485 (Mammal), 482 (Ichthy)  
ACBS 336A Applied Animal Nutrition  
ACBS 449 Diseases of Wildlife

### **Tools/Techniques/Internships**

RNR 403 -- Applications of GIS (3)  
RNR 417 – GIS for Natural Resources (3)  
RNR 419 -- Cartographic Modeling for Nat  
RNR 420 -- Advanced GIS (3)  
RNR 422 -- Resource Mapping (3)  
RNR 473 Spatial Analysis and Modeling (3)  
RNR 493 Internship  
RNR 499 Independent Study  
RNR 322 Field Methods in Nat Resources

### **Fire Ecology and Natural Resources Management**

RNR 448 Conservation Planning & Wildland Recreation  
RNR 355 Intro to Wildland Fire  
RNR 438 Wildland Fire Management  
RNR 440 Climate Change Adaptation  
RNR 441A - Natural Resource Management in Native Communities

### **Other Ecology/Conservation**

RNR 458 Ecosystem Ecology  
ECOL 438 Biogeography  
ECOL 406R Conservation Biology  
GEOS 478 Global Change  
RNR 495A Study Abroad Namibia/Australia/Ecuador

WFSC 430 Conservation Genetics  
WFSC 447 Wildlife Conservation Behavior

### **Economics/Policy/Planning**

RNR 485 Economics and Social Connections to Nat Resources  
AREC 217 Resources & Environmental Econ  
AREC 476 Environmental Law and Economics  
POL 481 Environmental Policy  
PLG 472 Environmental Land Use Planning  
GEOG 404 The Politics of Nature

### **Certificate in Rangeland Management courses**

RAM 382 Rangeland Plant Communities\*  
RAM 436A Grazing Ecology and Management  
RAM 446 Management + Restoration of Wildland Vegetation  
RAM 456 Rangeland Inventory & Monitoring  
RAM 487 Rangeland Management Planning

### **Marine Sciences Minor courses**

ECOL 496O- Galapagos Marine Ecology  
GEOS 212 Introduction to Oceanography  
ENVS 475 - Freshwater and Marine Algae  
ECOL 404R and L Biology of the Oceans (Fall)  
ECOL 412A and B Ocean Sciences  
ECOL 360 Marine Ecology and Conservation  
ECOL 450 Marine Discovery

### **Pre-Veterinary courses (based on CSU requirements<sup>1</sup>)**

CHEM 241A and 243A Organic Chemistry (4)\*  
MATH 263 (3)\*  
BIOC 384 Foundations in Biochemistry (3)  
PHYS 102 and 181 Physics (4)\*  
PLS 312 Genetics or ECOL 320 (4)\*

<sup>1</sup>Check each vet school for their specific requirements

## **Courses Required for Certification by the Wildlife Society**

1. Biological Sciences: 36 semester hours; must include subcategories a-e. (Sum of hours in a-e is 33, the other 3 hours may be in any of the 5 subject areas):
  - a. Wildlife Management: Courses emphasizing principles and practices of wildlife management. (6 hours)
  - b. Wildlife Biology: Biology and behavior of birds, mammals, reptiles, or amphibians; must include 1 course concerning birds or mammals. (6 hours)
  - c. Ecology: Courses in general plant or animal ecology (not human ecology). (3 hours)
  - d. Zoology: Taxonomy, biology, behavior, physiology, anatomy, and natural history of vertebrates and invertebrates. Courses in genetics, nutrition, physiology or plant taxonomy. (9 hours)
  - e. Botany: Courses in general botany, plant genetics, plant morphology, plant physiology, or plant taxonomy (9 hours). Course descriptions, immediately following course listing, are required. One of the following courses – dendrology, silvics, or silviculture are accepted. At least one course must be primarily concerned with plant taxonomy or identification (this course must be taken at a college/university and cannot be substituted by another course or experience). (9 hours)
2. Physical Sciences: 9 semester hours in chemistry, physics, geology, or soils, with at least 2 disciplines represented.
3. Quantitative Sciences: 9 semester hours that must include:
  - a. Basic Statistics (3 hours)
  - b. Quantitative Sciences: calculus, biometry, advanced algebra, systems analysis, mathematical modeling, sampling, computer science, or other quantitative science (6 hours)
4. Humanities and Social Sciences: 9 semester hours in economics, sociology, psychology, political science, government, history, literature, or foreign language.
5. Communications: 12 semester hours designed to improve communication skills such as English composition, technical writing, journalism, public speaking, or use of mass media.
6. Policy, Administration, and Law: 6 semester hours in courses that focus on natural resource policy and/or administration, wildlife or environmental law, or natural resource/land use planning; and courses that focus on the understanding of social, political and ethical decisions for wildlife or natural resource management. Tools supporting professional practice (e.g., photogrammetry, Land-Sat mapping, GIS) or more general courses such as criminology, political science, and introductory survey courses in conservation will *not* apply.